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HAS TLINGIT A GENETIC RELATION TO ATHAPASCAN?

By PLINY EARLE GODDARD

The question of the possible connection of Tlingit and Athapascan presented itself to Professor Franz Boas, when, during his work on the Northwest coast, the morphological similarities were observed by him. At that time the requisite knowledge of both Athapascan and Tlingit was lacking for a final determination of the question of genetic relationship.

When some years later Dr. John R. Swanton was engaged in field-work on the Northwest coast, he secured Tlingit linguistic material 2 from which a grammatical sketch was prepared for the Handbook of American Languages 3. The recording of this Tlingit material lacked the phonetic accuracy necessary for a basis of comparison, and the meanings of the stems were not determined with sufficient exactness. Dr. Swanton was aware of the general resemblance of Haida, Tlingit, and Athapascan, but realized the futility of making a prolonged and detailed comparison based on limited and faulty material.

Dr. E. Sapir read a paper at the Philadelphia meeting of the American Anthropological Association in 1914, on the Na-dene, a name he chose for a linguistic group composed of Haida, Tlingit, and all the Athapascan languages ⁴. Dr. Sapir's contention was that these three

hitherto considered independent stocks were genetically related. The material used for Tlingit was that embodied in Dr. Swanton's two contributions mentioned above. He drew upon the various sources of Athapascan material, restoring in many instances hypothetical parent-forms with which to make his comparison. The paper, which appeared in the "American Antropologist", was called preliminary; but the final results of the study have not yet appeared in print.

It was only in the winter of 1914-15 that an opportunity presented itself for a satisfactory examination of Tlingit. Mr. Louis Shotridge, a Tlingit Indian, spent some weeks in New York City, during which time Professor Boas secured rather full material, chiefly in the form of grammatical notes and lists of words. Particular attention was given by Professor Boas and his students to an exact classification and representation of the sounds of Tlingit. With the preparation and publication of this material 5, an opportunity for a profitable comparative study from the side of Tlingit was presented for the first time.

During the years in which a satisfactory knowledge of Tlingit has been awaited, various Athapascan languages have been studied, and bodies of texts and grammatical sketches have been published. The first of these dealing with Hupa contains some regrettable deficiencies in phonetic exactness. There are still large and important groups of Athapascan dialects as yet unstudied or unavailable, due to delay in

^{1.} The relationship of Haida and Tlingit was suggested and discussed in an article, « Classification of the Languages of the North Pacific Coast » (Memoirs of the International Congress of Anthropology [Chicago, 1893], 339-346).

^{2.} The texts were published in BBae 39 (1909).

^{3.} BBae 40 (pt 1): 159-204.

^{4.} The Na-dene Languages, a Preliminary Report (AA 17[1915]: 534-558).

^{5.} Franz Boas, Grammatical Notes on the Language of the Tlingit Indians (U. Penn. 8 [1917]: 1-179).

the preparation and publication of collected material. The Wailaki and Tolowa in north-western California will, when published, present very important linguistic material. The Yukon dialects are practically unknown, with the exception of Ten'a ¹. While, without this at present unavailable Athapascan material, the final word on the subject of a genetic relationship between Tlingit and Athapascan cannot be said, some useful comments and comparisons may be made. These indicate rather clearly what may be anticipated as the final decision on the subject.

In some respects the material to be compared presents unusual opportunities. Both Tlingit and the Athapascan languages have a rather large number of monosyllabic nouns, and the larger number of these are apparently simple and primary. The phonetic changes possible are therefore simplified and reduced in number; for the action of word-accents, both of stress and pitch, are eliminated. Phonetic changes should therefore proceed with unusual regularity. Simple nouns like these present great advantages also in the matter of stable and easily-determined meanings. In the case of Athapascan ca sun, we have a memory association tying a simple phonetic group with a definite single object. In most other instances there is opportunity for varying ranges of application. The word t'u water may come to be applied to LAKE and OCEAN; but, aside from an expansion or contraction of application, a change of meaning in the majority of such simple words, so complete as to make an original identity of form and meaning in the parent language untraceable in the descendants, is not likely to happen. The known history of Indo-European languages shows that certain classes of words - such as numerals, body-parts, and terms of relationship — are particularly stable.

I. J. W. Chapmann, Ten'a Texts and Tales (Paes 6, [1914]: 1-230).

What appears to have happened in the Athapascan languages is that monosyllabic, non-descriptive nouns have been gradually replaced by longer, descriptive terms. A sufficient number, however, of these simple nouns remain in the various languages to furnish a fair basis of comparison. For Tlingit, Professor Boas has furnished upward of three hundred simple nouns. When the Athapascan nouns of identical or closely related meanings are placed beside these Tlingit nouns in parallel columns, only a few words are sufficiently alike to attract attention 2. With the Tlingit words arranged alphabetically, phonetic sound-shifts between Tlingit and Athapascan, if present, should appear at once. No such shifts are found after careful study.

There are two relationship terms similar in form and of identical or allied meaning. In Tlingit, MOTHER-IN-LAW, is tean, and in Beaver, teon. Tlingit 'at', FATHER'S SISTER; and -at in the Athapascan dialects of Northwestern California, where the meaning is ELDER SISTER or COUSIN. This term, in these dialects, is also applied to FATHER'S SISTER. Were it not for this anomaly in classification, the meanings of the words would not in the least coincide. A connection is possible if it be assumed that in Athapascan the term for FATHER'S SISTER came to be applied to ELDER SISTER. If the change was from ELDER SISTER to include FATHER'S SISTER, the connection in meaning disappears.

A connection might be assumed between Tlingit wan EDGE, and Ten'a -vwon EDGE or BORDER, if a parallel of w=vw could be found. The Athapascan sound which appears with a queer alternation in various dialects as b and m, becomes vw, a bilabial spirant, in Ten'a. Without other correspondences, nothing can be made of this single instance.

Perhaps the most striking correspondence

^{2.} See below, p. 271.

in the nouns is the word for CRANE, — dut in Tlingit, and $d\varepsilon t$ in Kato, and found fairly frequently in other Athapascan dialects. A relation between Tlingit u and Athapascan ε or ι is all that is lacking. Since the word is almost an isolated case of phonetic correspondence of nouns of identical meaning, as will appear below, it seems more logical to consider the word one that Tlingit has borrowed from a neighboring Athapascan dialect.

Almost equally exact is the agreement of Tlingit t'aw FEATHER, and t'a' which, in Athapascan frequently translated FEATHER, is everywhere restricted to the larger stiff feathers of the wings and tail. The more exact rendering, then, would be PLUME. I am told there is a corresponding restriction in meaning in Tlingit.

In only one instance is there an indication of several nouns with the same phonetic correspondences. Tlingit $\dot{s}aq'$ and Athapascan $ts'i\tilde{n}$ mean BONE; Tlingit $\dot{s}ax$ means hat and Chipewyan tc'a dance-hat; and Tlingit $\dot{s}ix'$ and Jicarilla ts'ai mean dish. In these cases there is agreement only between the initial consonants, the other sounds varying. A dance-hat is probably something quite different from simply a hat. The case is too weak to be convincing, and, unsupported as it is, carries very little weight. Two other fair agreements appear in the list, — Tlingit can old person, and Beaver con old age; Tlingit ca song, and Chipewyan cen song.

Out of over three hundred monosyllabic nouns gathered by Professor Boas, most of which have clear-cut meanings, one hundred and fifteen have been matched with Athapascan words of identical or closely-related meanings. Some of the unmatched Tlingit nouns have meanings too general or too specialized to be matched satisfactorily with Athapascan forms. In many instances the Athapascan nouns of corresponding meanings are dissyllabic and have descriptive meanings, and are therefore

not comparable with the monosyllabic, nondescriptive nouns of Tlingit. This tendency to replace the simple nouns with longer descriptive terms is very pronounced in Athapascan. The unmatched Tlingit nouns, then, do not weaken the case for genetic relation. However, five fairly satisfactory agreements out of one hundred and fifteen which have been matched in meaning do not present an impressive proportion.

In addition to these, Sapir lists the following:

Athapascan	TLINGIT
-γe, xe grease	ex grease
-γινο tooth	ux tooth
-k!a arrow	g!a point
-onaye elder brother	hunx man's older brother
t'ez night	t'a't night
tok' fish	tl!u·k! cohoes
měs cheek	wac cheek
no place of retreat,	nu fort
island	

Of these xe GRESSE is unfamiliar to me in Athapascan; and Tlingit $e^{x}y$ (Boas $e^{y}y$) is given the meaning FISH-OIL. The Athapascan word for τοοτη is -γο, or -wo; Boas gives for Tlingit 'úx. Sapir gives q!a as meaning POINT, and compares it with Athapascan k!a ARROW. Swanton's texts and Boas', wordlist give the meaning POINT OF LAND. The connection in meaning would appear far-fetched. The Athapascan word k!a does not refer to the point of the arrow, but to the shaft, since the separable pointed end, either of stone or wood, has a different name. Boas has l'uku COHOE-SALMON, which leaves only the vowel u to carry the phonetic similarity; for glottalized t' and k' are very distinct from t and k without glottalization. In Athapascan, no does not mean a PLACE OF RETREAT, it means an ISLAND.

Dr. Sapir has assumed that the primitive Na-

dene language had the form cv, the elements always ending in a vowel, and that final consonants result from suffixes. There is evidence, as Sapir states, that Athapascan verb-stems have final consonants representing disappearing suffixes; but no good evidence is known for concluding that nouns also have been given their final consonants by this method. To be sure, the ignoring of all final consonants adds much to the ease with which equivalent forms can be found.

In the case of the verbs, Professor Boas has segregated about three hundred and fifty stems, to the greater number of which he has assigned meanings. The opportunity for comparison is not nearly so favorable in the case of verbs as in that of nouns. Phonetically, the verbal stem is part of a complex, subject to accent variations and to assimilation. In the case of Athapascan verbal stems, the presence of a series of reduced suffixes is to be suspected. These suffixes may appear as the final consonants of the apparently monosyllabic stems. The meaning of a monosyllabic noun appears without analysis, while the meaning of a verbal stem can be determined only by the examination of several verbs containing it. Often even then the meaning is elusive, and difficult of precise statement. It happens, therefore, that the matching of Professor Boas' list of Tlingit verb stems with Athapascan stems of equivalent meanings is a difficult matter. It has been attempted only where the meanings of the Tlingit stems have been rather definitely given. While the complete verbs in Tlingit usually can be rendered in an Athapascan dialect by verbs of fairly equivalent meaning, it does not follow that the stems are comparable, for other elements than the stem in each case help to make up the verb.

It has been possible to match one hundred and twenty-four of the Tlingit stems with Athapascan stems of similar meaning ¹. In a fair

1. See below, p. 275.

number of these instances, the agreement in meaning is satisfactory. Of these one hundred and twenty-four compared forms, only five show sufficient phonetic similarity to require comment.

Tlingit 'a TO SIT agrees in form with -'ai, -'a, an Athapascan stem used almost exclusively of the position of single inanimate objects. If the Tlingit meaning could be shown to be a derived one, the correspondence might be cited as evidence of common origin.

Tlingit stem na to drink, and Athapascan -nan with the same meaning, are irreproachable, since the final n of Athapascan is explainable as a suffix.

Tlingit t'a, t'd, t'd, t'en, mean to sleep. Athapascan $t'\varepsilon$, t'n, also has that for a secondary meaning. Its primary meaning relates to the position or movement of anything animate. The concept of sleeping, itself seems often to be connected with dreaming, the subjective view of sleep, while a reclining position is the objective view. The Tlingit verb-stem is also a noun meaning sleep, and comparable with Athapascan bat. In primary meaning, then, the two stems are widely separated.

Following in alphabetical order is Tlingit t an to carry a solid elongated object. There is an Athapascan stem t an, relating to the position or movement of a long object, such as a pole. The particular Tlingit verbs given are not comparable with the Athapascan, but there seems to be a fair agreement in the meaning and the phonetic form of this stem.

One of the Tlingit stems, meaning TO SHOOT WITH A BOW AND ARROW, is t'uk. Navajo has a stem t'o, which also means TO SHOOT WITH A BOW. Beaver has a stem t'ok, t'o TO SHOOT, but employed of shooting with a gun.

Tlingit has a stem $\dot{s}et$ ' TO TEAR, and Athapascan one, tc'el with a similar meaning.

Dr. Sapir cites additional correspondences: such as Athapascan -ca, -cal, TO CATCH WITH A

HOOK; and Tlingit cat, TO TAKE, TO PICK UP, TO SEIZE. The difference in meaning should be sufficiently apparent without comment.

The pronouns show but one resemblance sufficient to warrant comment. Tlingit has a third person singular form du. Certain of the northern Athapascan dialects have a reflexive third person possessive pronominal prefix de. Here, again, is a possible borrowing, which has been responsible for the limited distribution of the form in Athapascan.

Among the numerals, Tlingit has Lex' ONE, with which Athapascan Kato ta ONE, is comparable.

Professor Boas has succeeded beyond expectation in isolating and defining the etymological parts of the verbs. The adverbial prefixes are of the same general sort as are found in Athapascan, but among these there are no correspondences of note. Professor Boas lists as an incorporated noun q'u space, used in such expressions as q'udil'ák' IT IS WET (weather, soil). Compare with this Kato kowansal IT was hot.

Tlingit has a set of classifiers seemingly entirely lacking in Athapascan verbs which classify the subject or object solely by the limited application of the stem.

Morphologically, Tlingit is very similar to Athapascan. The nouns in both stocks seem to have been originally monosyllabic. To these primary nouns certain suffixes to form diminutives and augmentatives, etc., were added. The verbs are similar in structure, having elements of the same character which take the same general order. First are adverbial elements of direction and position, and pronoun objects. The stems are toward the end, and are preceded by the subject pronouns. In Athapascan there are modal elements, some of which precede the subject, and others follow. Tlingit has modal prefixes preceding the subject, but with classi-

fiers following it. Both Tlingit and Athapascan have suffixes for customary action, etc.

The most striking resemblance is the fact that each has a modification of the stem itself, which affects in Tlingit the quality and pitch of the vowel, and in Athapascan the quality of the vowel and modifies the final consonant. These modifications of the stems are connected in both instances with differences in mode and tense.

With this striking likeness in morphology, one would expect lexical similarity leading to the definite conclusion that the languages were originally one, or sprang from the same source. The comparisons made of the lexical content, however, do not justify this conclusion. The similarities are few, forming but a slight percentage of the whole. They might all be attributed to accident were there not at hand a more acceptable solution. The few nouns that are common are probably due to borrowing. It would be a remarkable thing if fully the number noted had not been borrowed in the course of the generations that Tlingit and Athapascan peoples have been neighbors.

The large majority of Tlingit monosyllabic nouns, stems, and other elements making up the verbs, the pronouns, post-positions, and adverbs, are totally different from any known Athapascan words or elements having a similar meaning. Until some satisfactory explanations can be given for this mass of apparently unrelated material, a common genetic origin cannot be admitted. Were a genetic relationship to be assumed, one of three possible explanations must be accepted:

- 1. That changes in the forms of the words and in their meanings have been so great and so general, that resemblances have disappeared without leaving discoverable phonetic shifts.
- 2. That the original parent language from which Tlingit and Athapascan have sprung had such a complete double set of names for com-

mon objects, that it was possible for Tlingit to be supplied with one set, and all the many Athapascan languages with the other, totally different set.

3. That the Tlingit have a creative genius for language-formation which, since they separated from the Athapascan peoples, has led them to replace all the older forms with newlycreated ones.

It must be conceded that the linguistic universe might have been so ordered that any one or all of these three things might have happened. In particular, there seems to be no evident reason why words should not be created constantly in any language. However, modern linguistic study is based on a belief in phonetic laws which produce uniform results under identical conditions. The one recognized method of establishing genetic relationship is to point out the uniform changes which in the course of time have caused the separation of a uniform linguistic area into dialects and related languages. This method of establishing genetic relationship has failed in several instances to produce a definite conviction that relationship really exists. Critics are urged to accept the results on the plea that the particular problems are too difficult to be solved by this method. The question then presents itself whether we shall retain the old definition of a linguistic stock as a group of languages whose genetic

relationship has been established by showing that they have diverged as a result of uniform phonetic change, or whether we shall form a new definition. A linguistic stock, such as the proposed Na-dene, consists of a group of languages called Athapascan which have become divergent as a result of phonetic change, and of two other languages which contain a few words and elements resembling similar ones in the first group.

For one, I contend that the present definition should be kept. " Athapascan " is an exceedingly useful designation of a definite group. If the name "Na-dene" is to be established, may we not have also a new generic term to be applied to such groups of a linguistic stock plus others?

When once we have concluded that Tlingit and Athapascan are either unrelated, or so remotely related as to have left no clearly perceptible evidence of the relationship, a new and interesting problem will present itself. When two peoples either linguistically unrelated or very remotely related come into prolonged contact, to what extent do their languages become assimilated, phonetically, morphologically, and lexically?

That the various correspondences pointed out in this paper and by Dr. Sapir are the result of such acculturating influence, I have little doubt.

COMPARATIVE VOCABULARY ¹

NOUNS

TLINGIT.

'á a lake Ι.

'at' father's sister 2.

'às tree 3.

'an town

ATHAPASCAN

 $m\alpha \tilde{n}k$ lake H at older sister, father's sister K k'i \tilde{n} tree H kai village Ten'a

1. The abbreviations used in the vocabularies to indicate the dialect from which the examples are taken are

the following: B, Beaver; CC, Chasta Costa; Chip, Chipewyan: H, Hupa; K, Kato; Nav, Navajo; T, Tolowa.

5.	'éq' beach	dasr beach Ten'a
6.	'tt' place	$-d\tilde{m}$ place at which (suffix) H
7.	'ic father	-t'a father H
8.	'itc' rock	tse stone H
9.	'ìk' brother	k'ıl (younger) brother H
10.	'lxt' shaman	-yın to practise shamanism Ten'a
II.	'úx tooth	-wo' tooth K
Ι2.	ya face	-nıñ face H
13.	yát' offspring	-yactc young K
14.	yan hunger	don' famine B
15.	yàk" canoe	tc'i canoe K
	:N. 1 1 1	(-man border, edge H
16.	yżx border, edge	-vwon border, edge Ten'a
.17.	yet fat	k'wa' fat K
18.	yék' spirit	-dje mind H
19.	yì place underneath	-uy€ under K
20	with con	/ -itc son (man speaking) K
20.	yit' son	/ -yac son (woman speaking) K
2.5	Nic choor) θunθ spear Chip
21.	yis spear	l tut spears Ten'a
22.	yùw stomach	bu' stomach K
23.	wàc cheek	-ni' face ¹ B
2.4	guým edoo	\ -man border, edge H
24.	wán edge	(-vwon border, edge Ten'a
25.	wáqʻ eye	-na eye H
26.	wu food	/ ki' food B
) tc'añ food K
27.	hài' dung	tc'ani faeces K
0	Tree 1	(yε house K
28.	hit' house	\ kin' house B
	1,	$(m\alpha n \text{ house } T$
29.	hin water	t'o water K
30.	hónx elder brother (said by male)	onañ older brother K
31.	da weasel	main weasel K
32.	dė trail	t'ın trail H
33.	ds moon	ca, sun, moon
34.	duk^{u} skin	suts skin H
		δαθ skin Chip
35.	duq cottonwood-tree	t'is cottonwood Apache
36.	dút crane	det crane K
37.	(t'a) sleep	but sleep B

^{1.} A separate simple word for CHEEK is generally lacking in Athapascan languages.

38.	t'ày fat	,	k'wa' fat K
39.	t'at' night	}	t'ε' night K t'εδ night Chip
40.	<i>t'àn</i> navel	(-ts' ek' e navel K
4I.	t'àn sea-lion		tyits sea-lion K
42.	$t' \dot{e} \dot{x}'$ heart		-tci' heart K
43.	t'è stone		tse stone H
44•	(t'(x') rope	}	t'ot rope H bet rope K
45.	t'il shoe		-k'€ moccasin Chip
46.	t'ú mind		niye mind Chip
47.	t'oq' anus		-sl€' anus K
48.	t'à king-salmon	}	k'ga dried king-salmon Ten'a ges black salmon
49.	t'aw feather	}	$t'a'$ feather K $-t'a\gamma$ to fly
50.	tiy elbow		-tcitc elbows H
51.	tuk' cradle		ts'al cradle K
52.	(sa) name		-zi' name Chip.
53.	si neck		-k'os neck B
54.	si daughter		-tse daughter H
55.	sit' spruce		xai spruce T
56.	sik' strap, belt, cord	}	δάδ belt Chip sus belt Jic
57.	su rain	}	tca' rain Chip ttcañ rain T
58.	sα clay	}	tets clay bus adobe
59.	<i>sàq</i> bone		$ts'\alpha\tilde{n}$ bone K
60.	saxu hat		tc'a dance-hat Chip
61.	(sèq) smoke		tit smoke H
62.	šìk' black bear		sats bear H
63.	ŝix' dish	}	8'ai dish Chip tsa' dish B -ts'ai dish Jic
64.	šúku rib	`	tconge' ribs B
65.	dzās skin		sıts skin bark H
66.	tsusk'u owl		bo' owl Apache
67.	tšutsku ^c bird	}	tcwą birds B tc'ac bird CC
68.	cά head	,	-si' head K
69.	çàn old person		con old age B
-	-		**

70. 71. 72. 73. 74. 75. 76.	cát spoon cat salmon-trap cé blood cèt horn (ci) song djín hand tcàn mother-in-law tċat cache gáxu duck	tus spoon Chip sas spoon T s fish trap H dal blood Chip -ds' horn K -csn' song Chip -la' hand K -ts' \(\pi \) mother-in-law Chip tso caches Ten'a tc duck Chip
79. 80. 81. 82. 83.	gùs cloud gúku ear gwét bag, pouch k'al't' ashes k'èL dog k'-oLk' mud	k'os cloud B -tc'gε' ear K δiθ sack Chip tεz ashes Chip tιñ dog H djañ mud K
85. 86. 87. 88.	gan fire-wood ge place between folds of something q'ou' stomach q'wal' pot	\ tcutc fire-wood K (?) \(tcwtc fire-wood H \) \(-t'a \) blanket fold K \(-but' \) stomach, belly Chip \(\) \(\) \(\) \(\) pot Ten'a
89. 90. 91. 92. 93.	(q'wal') down, feathers xixtc' frog xidzi burnt wood, coals x'at' island x'tis' club (xa) war	isa pot Apache -θ'αθε feathers, downy Chip tew'al frog H te'ailε frog Chip t'εs coal Chip nu, nuwε island Chip xat club Chip man war-party H
95. 96. 97. 98. 99. 100. 101. 102. 103.	xàw hair xet chest xiy pack xoxu husband x'a mouth x'àn fire x'ùs foot taxu famine teq' red ochre	-ga' hair K -γa' hair B -ko breast Chip xait load H -xañ busband H -da' mouth K -sa opening of the mouth H kwoñ fire K -kwe' toot K don' famine B cic ochre K (ntsi nose Chip
104.	tù nose	nwo' nose B

105.	l'ew sand	sai sand K
106.	ťúť tongue	-tso tongue Nav
107.	l'uk" cohoe-salmon	tok' salmon H
108.	La mother	-nan mother K
109.	L $\dot{a}k$ sister	-t'eci' sister K
IIO.	£èt' snow	yas snow K
III.	Liy meat	$-tsi\tilde{n}$ meat H
I I 2.	L'ak' dress	kya dress H
113.	L'eq' finger	-la' finger K
114.	L'et mentula	-lai' mentula K
115.	L'it' tail	-tce' tail Chip

VERBS

TLINGIT

'à, 'á, 'én to sit (sing.)

'àt', 'át', 'át', 'a to walk in company

'át' cold

' $\dot{a}k$ ', ' $\dot{a}k$ ', ' $\dot{a}k$ ' to interlock

'àx, 'àx, 'àx to carry a textile

'àx, 'àx, 'àx to hear

'ek" bad

'eku' to whistle

'in to pick up; to carry in a vessel 'in to kill many

ix' to shout, to call, to invite

'ù, 'ú, én to dwell
'ù, 'ú, 'υέn to buy

'ưż, 'ưż, 'ύż, to wash

 uk^{u} , uk^{u} , uk^{u} , uk^{u} to boil

' $\dot{u}x$, ' $\dot{u}x$, ' $\dot{u}x$, to blow

ATHAPASCAN

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-'ai, -'a to have position (of round objects)
   Chip
-d\varepsilon t to walk (pl.) Chip
-t'\alpha\tilde{n}, -t'\varepsilon to be cold K
-k'as cold Nav
-dli, -dlu to be cold
-l'on, l'u to tie, to knot Chip
-l'on, l'oi to weave baskets H
-k'yos to carry a flexible object H
-xt to move flat, flexible objects H
-ts'εγ, ts'ε' to hear K
-tc€' to be bad K
-tc'\varepsilon, -tc'ok' to be ill tempered, to be angry
-yic to whistle K
-sot (-yot) to whistle Jic
-k'\alpha n, -k'a to move a vessel containing liquid K
-gan, -gat to kill (pl. object) K
-zet, -zel to shout Chip
t'ai to speak as a chief Jic
-et, -et' to stay at a place Chip
-xait, -xai to buy H
-d\varepsilon to wash Chip
-gis to wash Nav
-b\varepsilon i to boil Nav
-yoc to boil Jic
-medj to boil H
-yot, -yol to blow (with the breath) H
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yà, yá, yàn to pack
                                                            -γin, -γεt to carry on the back Chip
yat' long
                                                            -nes long H
                                                            -tal, -txt to step H
yás to step
yάq' to pull
                                                            -los to drag, to pull along H
                                                            -was to shave off, to whittle H
yèx, yéx, yéx to whittle
                                                            -yos to draw out of narrow space, to stretch H
yít', yít', yít' to pull
                                                            -t'a\gamma, -t'a' to fly K
yitc, yitc to fly
yüku', yüku', yöku' to shake
                                                            -wat, -wa to shake H
wáś, wáś, wźś to inquire
                                                            -x \propto t, -x \propto l to ask a question H
wàt', wát, wát' to break
                                                            -k'yas to break H
wús tough, hard
                                                            -t\alpha ts to be strong K
wúś, wúś, wúś, to ask, to inquire
                                                            -x\alpha t, -x\alpha l to inquire H
wuq' wide
                                                            -t' \in l, t'at to be wide, to be flat K
hát', hát' to drive (animals)
                                                            -yot, -yot to drive, to chase K
                                                           -'a to be full Chip
bik' full
                                                           -b\alpha\tilde{n} to be full K
hù, hú, hén to wade, to swim
                                                            -kot walking in water (wolf) Chip
                                                            -tcat, -tcat to shout K
buk to shout
                                                           -zet, -zit to shout Chip
das to catch in snare
                                                            -li' to snare K
d\acute{\alpha}t, heavy
                                                            -das to be heavy H
dex' ashamed
                                                            -ya\tilde{n} to be ashamed K
d \not\in t to watch
                                                            -yan, -yañ to watch, to spy upon H
                                                           -t'on to tie, to knot Chip
dúx'u to tie a knot
                                                           -yets to tie H
duL' to fly
                                                            -t'a\gamma, -t'a' to fly K
t'á to boil in water
                                                            -m \epsilon d j to boil H
t'à, t'à, t'én to sleep (sing.)
                                                            -t'\varepsilon, -t'\varepsilon n to lie down (sing only) H
t'àw to steal
                                                            -'i' to steal Chip
t'àn, t'án, t'án to carry a solid, elongated
                                                            -t'an, -t'a\tilde{n}, t'uw to handle or move a long
                                                              object H
t'\alpha q' to hit with the point of a long thing.
                                                            -g \in t, got to spear B
t'\iota x' to twist
                                                            -dits, -dis to twist K
t'in, t'in, t'in to see
                                                           -'\tilde{n}' to look, to see K
                                                           -t'sy to teach H
t'úw to count
                                                           -t'ak to count H
                                                            -nit to drill Nav
t'ùt, t'út, t'út to drill
                                                           -do to heat Nav
                                                           -do to be hot Apache
t'à, t'á, t'én hot
                                                            -sel, -sel to be warm H
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t'ax' to bite
                                                          -gits to bite K
                                                          -ca' to catch with a hook K
t'ex to fish with hook
                                                          -gaj, -gac to fish B
                                                          -hwal, -hwat to fish for with a hook H
t'ex' to pound
                                                          -tset', -tsil to pound H
t'i, t'i, t'i to find
                                                          -tsan, -tsañ to find H
                                                          -l'o to shoot with arrow Nav
t'ùku', t'ùku', t'òku' to shoot an arrow
                                                          -t'ok, -t'o to shoot (with a gun) B
                                                          -t'as to shoot (with bow and arrow) Chip
sà, sá, sén to name; to breathe
                                                          -y\varepsilon', -yi' to be named Chip
šis, šis, šis to sail; smoke rises
                                                          -kit to hang, to spread, to settle (fog or
                                                              smoke) H
šeť, šeť, šéť to tear
                                                          -tc'ut, -tc'ul, -tc'el to tear, to rend Chip
šú to sew with cedar-withes
                                                          -da to sew Chip
šúw, šúw, šúw to chop
                                                          -t\theta \in t, -t\theta \cup t, -\theta \in l to strike, to chop Chip
tsàq' tsáq', tsáq' to push with the point of a
                                                          -tse, tsi, tsi' to push (long object?) Chip
  long thing
                                                          'ets to kick B
tsèx, tséx, tséx to kick
                                                          -t'al to kick H
                                                          -lu, -le to dive, to swim under water H
tsìs, tsis, tsis to dive, to swim under water
tsin alive, strong
                                                          -na, -nai to be alive Chip
                                                          -kit to catch with the hands H
càt', cát', càt' to take
                                                         -tcu to seize Chip
can old
                                                          sa old age Nav
                                                          -je to hunt game Nav
cu to hunt
                                                          -zε, -zε' to hunt Chip
                                                          -dlo-dlok' to laugh Chip
cùwq, cúwq, cówq to laugh
djàq', djáq', djáq' to kill (sing. object)
                                                          -zu' to kill (sing. object) Chip
                                                          -\delta \alpha n, -\theta \alpha n, -\delta \epsilon n, -\theta \epsilon n to think Chip
dji to think
djun to dream
                                                          -lal, -tal to dream to sleep Chip
djūx, djūx, djūx to roll a ring or hoop
                                                          -bas to roll a hoop Jic
tcún to wound
                                                          -tats to shoot, to wound B
tcùku, tcúku, tcúku to rub a skin in order to sof-
                                                          -gis to rub a skin lic
  ten it
na to drink
                                                          -nan to drink K
n\dot{\alpha}, n\dot{\alpha}, n\dot{\alpha}n to do, to work
                                                          -'ıñ to do K
nat' to shake
                                                          -wat to shake (intrans.) H
nàq', náq', náq' to stand (pl.)
                                                          -ya to stand on one's feet (pl. only) H
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-la, -lai, -lat relating to the position or movement of two or three objects Chip

-kat to swallow K

 $-d\alpha k'$ to swallow B

nút' to swallow

ni, ni, nin to carry several things

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nik', nik', nik' to tell
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nix' to smell gxs a long thing moves straight ahead

gāc to cohabit
gán, gản to burn
gé, gén large
gử to move
gửť, gúť, gúť, gú to go (sing.)
gwás, gwás, gwás fog
k'e, k'en to track
k'ú, k'uén to know
k'ùq', k'úq', k'úq' to bubble
kwatc to swallow
k'ats sharp-pointed

k'uts to break (a strap)

ġàx, ġáx, ġáx to cry
ġat to split

git', gu' dark

gèn, gén, gén to look geq' to throw q'à, q'á, q'én to sew g'a to say

 $q'\ell$, q'e, q'in to sit (pl.)

q'it' to suspect
q'ox to travel by canoe
q'àq', q'áq', q'áq' to swim (fish)
q'áL' to cut fish lengthwise
q'es to urinate
xàc, xác, xác to cut
xit', xit', xit' to sweep
x'sk'' dry
x'ás' to scrape, to slice
xà, xá, xén to eat

- I. See also t'in, t'in, t'in, above.
- 2. See nik', nik', nik', above.

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-lik to relate H
 -nak to relate K
-ni, -na, -n to speak K
 -tcan, -tcic, to smell K
 -k'ats, -k'as, -k'at relating to the movement
    of long objects H
 -get to have intercourse B
 -k'a to burn Chip
 -tcai large Chip
 -k'e to fall Chip
 -jo to be happy Apache
 -kit to hang, to settle (of fog) H
 -k'ε, -k'ai to follow track, to trail Chip
 -tsit to know H
 -γoc to ferment Jic
 -d\alpha k to swallow B
 -t'an sharp-pointed Chip
-t'at, -t'al to break (string or line) Chip
-k'yas to break H
 -tsak' to cry Chip
-k'ul, k'ul to split H
 -g \in l', -g \in l, -g \propto l relating to the passing K
of the night, dark K
-g \in ts, -g \propto c, -g \in to look, to see H
-d\varepsilon l, -d\varepsilon t to throw H Chip
-da to sew Chip
-n\alpha k to relate K
-da to sit (sing.)
-k'ε to sit (du.) B
-ts'a, -ts'i to sit (pl.)
-yan, y \propto \tilde{n} to observe with suspicion H
-k'i to travel by canoe Chip
-l\bar{u}, -l\varepsilon to swim (fish) H
-at, -\alpha t to slit open H
-lats to urinate K
-t'ats, t'as to cut K
co to sweep Nav
-teworg to sweep H
-tsai, sai to be dry K
-gats, -gas to scrape K
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-yan', -yil', -tan to eat K

xa to paddle

xè, xé, xen to camp over night

xuct' to whip, to club

xut' to drop, to chop, to pull xuxu, xuxu, xuxu to call Lan, Lan deep (water, snow)

La to feed

Làq', Láq', Láq' to overcome, to win

L'aku' scared

 $L'\alpha k'$ wet

L'it', L'it' cast off, to abandon

L'ul' to defecate ta complete, deep t'èx, t'éx, t'éx to dance -k'i to paddle Chip

 $-w \in l'$, $-w \cdot l$, $-w \cdot l$ the passing of the night H -xat, -xxt to strike repeatedly, to beat a drum B

-sil', -sal, -tsal to strike repeatedly K

-gal', -gal, -gal to drop, to beat K

-tcat, -tcat to shout K

-sat deep (water) K

-tcat' to feed K

-na to win in a contest Chip

 $-d\varepsilon\gamma$, $-d\varepsilon'$ to win K

-gut, -gac to be afraid K

-cal to be wet B

-tcol, -tcal to be wet or damp K

-le to leave to quit B

-tcan, -tcic to leave one K

-tcañ to defecate K

-sat deep H

-yε to dance H